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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/554,709

10/27/2005

Hiraku Kawasaki

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9367

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EXAMINER

CLARK, GREGORY D

ART UNIT

PAPER NUMBER

4152

MAIL DATE

DELIVERY MODE

10/02/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/554,709	Applicant(s) KAWASAKI, HIRAKU	
	Examiner GREGORY CLARK	Art Unit 4152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/27/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The specification is objected to because of the following informalities: The examiner objects to the usage of the term “claim” as a point of reference in the specification in the following:

Page 3, lines 9, 27, 32

Page 4, lines 6, 7, 14, 19, 25, 26, 33, 34

Page 5, lines 11, 19, 28, 33, 34

Page 6, lines 5, 6, 11, 24, 25, 30, 31

Page 7, lines 5, 6, 14, 15, 20, 21, 28, 29

Page 8, lines 1, 2, 13, 14, 20, 21, 31, 32

Page 9, lines 3, 4, 8, 9, 15, 20, 22, 26, 28, 30, 32

Page 10, lines 2, 9, 11, 15, 22, 25, 28, 31, 34

Page 11, lines 5, 7, 9, 13, 17, 22, 24, 32

Page 12, lines 1, 3

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 4152

1. Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1-5, 7-9, 14-18, 20-24 the phrase "paint-like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "paint-like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Regarding claims 1 and 14 the phrase "plate-like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "plate-like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claims 3 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant only gives physical properties and fails to specify the nature of the coating that results in a plate material with said surface tension.

Claims 3 and 16 are indefinite because fails to set forth the composition or structure of the coating that gave rise to the surface tension value and only claim properties of the coating. The specification does not set forth examples of compositions

Art Unit: 4152

or class of compositions that clarifies that which is or is not meant to encompass the property claimed. Claims that merely set forth physical characteristics desired in an article, and not setting forth specific compositions which would meet such characteristics are invalid as vague, indefinite, and functional since they cover any conceivable combination of ingredients either presently existing or which might be discovered in the future. Ex parte SLOB, 157 USPQ 172 (Bd. Pat. App. & Int. 1967).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kawasaki (2005/0103481).

Regarding Claim 1, Kawasaki teaches the surface treatment of a plate-like substrate with a coating (abstract). The coating is applied in the plate thickness direction (paragraph 34).

Claims 1, 2, 12-15, 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamiya (JP 08-269367A).

Regarding Claim 1, Kamiya teaches the surface treatment of a plate-like substrate with a coating (paragraph 8).

Regarding Claims 2 and 15, Kamiya teaches the surface treatment of a plate-like substrate with a coating to impart a hydrophobic nature (paragraph 8) involving a perfluoroalkyl (hydrophobic organic) group functional silica material (paragraph 10).

Regarding Claims 12 and 13, Kamiya teaches the invention of claim 1. Kamiya also teaches that the plate-like material used as the substrate for the surface treatments are made from aluminum/aluminum alloy and the plate-like material is of a radiation fin of a heat exchanger (paragraph 1).

Regarding Claim 14, Kamiya teaches the surface treatment of a plate-like material made of aluminum/aluminum alloy and reports no specification of the metal surface. Given that the desired surface properties were achieved by the coating method and Kamiya discloses the claimed invention except for providing the specifics of whether the aluminum surface has protrusions or depressions.

As Kamiya uses a like material (aluminum) in a like manner as claimed, it would be expected that the aluminum would have the same characteristics claimed,

Art Unit: 4152

particularly the surface after coating treatment, absence a showing of unexpected results.

Regarding Claim 25, Kamiya teaches the invention of claim 14. Kamiya also teaches that the plate-like material used as the substrate for the surface treatments are made from aluminum/aluminum alloy and the plate-like material is of a radiation fin of a heat exchanger (paragraph 1).

Regarding Claim 26, Kamiya teaches the invention of claim 14. Kamiya teaches the plate-like material is of a radiation fin of a heat exchanger (paragraph 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 7, 16, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamiya (JP 08-269367A).

Regarding Claim 3 and 16, Kamiya teaches the surface treatment of a plate-like substrate with a coating to impart a hydrophobic nature (paragraph 8). Kamiya presents data to show the plate-like substrate is rendered repellent to water after the coating treatment. Kamiya does not present the repellency data in the units of dyn/cm. Kamiya reports repellency by contact angle value (analogous means of reporting repellency).

It would have been obvious to one having ordinary skill in the art at the time of the invention to adjust hydrophobic nature of the material selected to obtain the desired level of repellency for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980).

Regarding Claims 7 and 20, Kamiya teaches the invention of claims 1 and 14. Kamiya does not mention the viscosity of the paint like coating used to coat a plate-like material. Since Kamiya teaches the same invention and fails to mention viscosity, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the viscosity of the solvent based coating for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980).

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki (2005/0103481) in view of Mizutani (6,013,724).

Regarding Claims 4 and 5, Kawasaki teaches the invention of claim 1.

Kawasaki does not give the method of how the coating is delivered or the solvent that is used. Mizutani teaches a solvent based hydrophobic paint coating which uses an organic solvent selected from butanol, octanol, and diacetone alcohol (Column 40, lines 54-58).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the appropriate solvent at the appropriate concentration, since it has been held that the provision of adjustability, where needed, involves only routine skill in the art. *In re Stevens*, 101 USPQ 284 (CCPA 1954).

Claims 4-6 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya (JP 08-269367A) in view of Mizutani (6,013,724).

Regarding Claims 4-6 and 17-19, Kamiya teaches the invention of claims 1 and 14. Kamiya does not give the means of how the coating is delivered or the solvent that is used. Mizutani teaches a solvent based hydrophobic paint coating which uses an organic solvent selected from butanol, octanol, and diacetone alcohol (Column 40, lines 54-58).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the appropriate solvent at the appropriate concentration,

Art Unit: 4152

since it has been held that the provision of adjustability, where needed, involves only routine skill in the art. *In re Stevens*, 101 USPQ 284 (CCPA 1954).

Claims 8-11 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya in view Lever (5,079,087).

Regarding Claims 8 and 21, Kamiya teach the invention of claims 1 and 14. Kamiya teaches a plate material treated with a fluoroalkyl containing silica (hydrophobic silica) thermoset resin to give the surface repellency to water (paragraph 10). Kamiya does not teach corrosion resistant treatment of the plate-like material. Lever teaches the treatment of plate-like (heat exchange fins, Column 1, lines 8-10) with an activated alumina and a organic resin formulation (Column 2, lines 12-16) that imparts hydrophilicity and corrosion resistance to the plate-like material surface (Column 2, lines 33-37). Lever teaches that condensed water readily forms spherical drops as the surface of the fins that has a hydrophobic nature and these water droplets interfere with air flow in the spaces between the fins (Column 1, lines 19-22).

It would have been obvious to some one of ordinary skill in the art at the time of the invention to combined hydrophobic plate-material treatment of Kamiya with the hydrophilic and corrosion resistance plate-like treatment of Lever to give a means to prevent corrosion damage caused by water collecting on the fin surface and to prevent water droplets from interfering with air flow (Column 2, lines 33-37; Column 1, lines 19-22).

Regarding Claims 9 and 22, Kamiya and Lever teach the invention of claim 8. Lever also teaches a hydrophilic activated alumina and resin formulation used to give a hydrophilic nature to the plate-like material dispersed in volatile organic solvents (Column 2, lines 20-23).

Regarding Claims 10, 11, 23 and 24, Kamiya and Lever teach the invention of claim 8. Both Kamiya and Lever do not teach the use of a chromic acid treatment or an oil removal treatment. Both Kamiya and Lever teach coating a plate-like substrate to achieve hydrophobic and hydrophilic surfaces.

As Kamiya and Lever use like materials (hydrophobic and hydrophilic based coating treatment) in a like manner (without chromic acid or an oil removal treatments) as claimed, it would be expected that the surfaces would have the same characteristics as claimed.

It would be expected that someone of ordinary skill in art at the time of the invention could have used the coatings taught by Kamiya and Lever to give hydrophobic or hydrophilic surfaces to the plate-like material without chromic acid or an oil removal treatments.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY CLARK whose telephone number is (571)270-7087. The examiner can normally be reached on M-Th 7:00 AM to 5 PM Alternating Fri 7:30 AM to 4 PM and Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Del Sole can be reached on (571)272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GDC

/Joseph S. Del Sole/

Supervisory Patent Examiner, Art Unit 4152